

We claim:

Claim 1. A process for formulating a ruminant food ration, the process comprising:

determining the methionine needs of the ruminant,

identifying a plurality of natural or synthetic feed

5 ingredients and the nutrient composition of each of said ingredients wherein one of said ingredients is a hydroxy analog of methionine selected from the group consisting of 2-hydroxy-4-(methylthio)butanoic acid, ammonium salts of 2-hydroxy-4-(methylthio)butanoic acid, alkaline earth
10 salts of 2-hydroxy-4-(methylthio)butanoic acid, alkali earth salts of 2-hydroxy-4-(methylthio)butanoic acid, zinc salts of 2-hydroxy-4-(methylthio)butanoic acid, alkane esters of 2-hydroxy-4-(methylthio)butanoic acid, alkane amides of 2-hydroxy-4-(methylthio)butanoic acid,
15 and oligimers of 2-hydroxy-4-(methylthio)butanoic acid, and

formulating a ration from the identified feed ingredients to meet the determined methionine needs of the ruminant which comprises one or more grains, the
20 hydroxy analog of methionine, and optionally a bypass fat wherein (i) the hydroxy analog of methionine is added separately from any bypass fat which is included in the ration, and (ii) the ration is formulated on the basis that at least 20% of the hydroxy analog of methionine is
25 assumed to be available for absorption by the ruminant.

2. The process of claim 1 wherein the hydroxy analog of methionine is a salt of 2-hydroxy-4-(methylthio)butanoic acid selected from the group consisting of ammonium, magnesium, calcium, lithium, sodium, potassium, and zinc.

3. The process of claim 1 wherein the hydroxy analog of methionine is an ester of 2-hydroxy-4-(methylthio)butanoic acid selected from the group consisting of methyl, ethyl, 2-propyl, butyl, and 3-methylbutyl.

4. The process of claim 1 wherein the hydroxy analog of methionine is an amide of 2-hydroxy-4-(methylthio)butanoic acid selected from the group consisting of methanamide, dimethanamide, ethylmethanamide, butylamide, dibutylamide, and butylmethanamide.

5. The process of claim 1 wherein the ration is formulated on the basis that at least 40% of the hydroxy analog of methionine is assumed to be available for absorption by the ruminant.

6. The process of claim 1 wherein the ration does not comprise a bypass fat.

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7. A process for formulating a ruminant food ration, the process comprising:

determining the methionine needs of the ruminant,
identifying a plurality of natural or synthetic feed
5 ingredients and the nutrient composition of each of said
ingredients wherein one of said ingredients is a hydroxy
analog of methionine selected from the group consisting
of 2-hydroxy-4-(methylthio)butanoic acid, ammonium salts
of 2-hydroxy-4-(methylthio)butanoic acid, alkaline earth
10 salts of 2-hydroxy-4-(methylthio)butanoic acid, alkali
earth salts of 2-hydroxy-4-(methylthio)butanoic acid,
zinc salts of 2-hydroxy-4-(methylthio)butanoic acid,
alkane esters of 2-hydroxy-4-(methylthio)butanoic acid,
alkane amides of 2-hydroxy-4-(methylthio)butanoic acid,
15 and oligimers of 2-hydroxy-4-(methylthio)butanoic acid,
and

formulating a ration from the identified feed
ingredients to meet the determined methionine needs of
the ruminant which comprises mixing one or more grains
20 with the hydroxy analog of methionine, wherein (i) the
ration is formulated on the basis that at least 20% of
the hydroxy analog of methionine is assumed to be
available for absorption by the ruminant, and (ii) the
ration does not comprise a bypass fat.

8. The process of claim 7 wherein the ration is formulated on the basis that at least 40% of the hydroxy analog of methionine is assumed to be available for absorption by the ruminant.

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9. A process for formulating a ruminant food ration, the process comprising:
determining the methionine needs of the ruminant,
identifying a plurality of natural or synthetic feed ingredients and the nutrient composition of each of said ingredients wherein one of said ingredients is a hydroxy analog of methionine selected from the group consisting of 2-hydroxy-4-(methylthio)butanoic acid, ammonium salts of 2-hydroxy-4-(methylthio)butanoic acid, alkaline earth salts of 2-hydroxy-4-(methylthio)butanoic acid, alkali earth salts of 2-hydroxy-4-(methylthio)butanoic acid, zinc salts of 2-hydroxy-4-(methylthio)butanoic acid, alkane esters of 2-hydroxy-4-(methylthio)butanoic acid, alkane amides of 2-hydroxy-4-(methylthio)butanoic acid, and oligimers of 2-hydroxy-4-(methylthio)butanoic acid, and

formulating a ration from the identified feed ingredients to meet the determined methionine needs of the ruminant which comprises mixing one or more grains with a hydroxy analog of methionine, wherein (i) the ration is formulated on the basis that at least 20% of the hydroxy analog of methionine is assumed to be

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available for absorption by the ruminant, and (ii) the ration does not comprise a bypass fat.

10. The process of claim 9 wherein the ration is formulated on the basis that at least 40% of the hydroxy analog of methionine is assumed to be available for absorption by the ruminant.

11. The process of claim 9 wherein the ration is formulated on the basis that between about 40% and about 55% of the hydroxy analog of methionine is assumed to be available for absorption by the ruminant.